DELAWARE STATE MEDICAL JOURNAL

Owned and Published by the Medical Society of Delaware
Issued Monthly Under the Supervision of the Publication Committee

Volume V
Number 8

AUGUST, 1933

Per Year $2.00
Per Copy 20c

THE WILMINGTON DEATH RATE

ARTHUR C. JOST, M.D.,*

Dover, Del.

There is issued weekly by the Division of Vital Statistics of the Bureau of the Census a tabulation under the name of the "Health Index", which gives certain statistical data of the cities reporting to the Division the mortality occurring within the stated period. There are eighty or more of the largest cities of the United States which so report. They represent a section of about 37,000,000 of the total population of the country. The tabulation thus gives a very accurate idea of the current mortality of the urban population of the nation. Not the least interesting feature is the opportunity afforded to compare—almost at a glance—the records of the different reporting cities, though the publication itself recommends caution in the interpretation of the data presented.

The need of this caution is obvious. There are of necessity possibilities for wide variations in the number of deaths occurring in a community during such a limited time as a week. A week during which the number of deaths falls below the average is almost sure to be followed by one which presents a high rate. Difference in the mechanism of collecting the data, too, may explain some of the wide variations. Under some procedures, the majority of the deaths occurring in the month tend to be bunched as having occurred in certain weeks. Delayed certificates tend in this way to swell the reports of the week during which the month ends. These and other conditions will be immediately recognized as reasons which will justify the recommendation for caution which is a feature of the report.

On the other hand, the value of some such publication is obvious, furnishing as it does an opportunity for the immediate recognition of unusual mortality trends and the presence of fatal illnesses to an extent greater than is ordinarily observed. The issue of the data at longer intervals would not meet this indication. It is true that by so doing, wide weekly variations would not be brought into prominence—since these variations would be smoothed out to a very great degree if the unit of time were a year—but delaying the date of issue would fail utterly to give the information required promptly, if immediate action is to be taken.

The publication referred to is very widely distributed and frequently reference appears in the press to certain of the data which it contains. For example, the Journal of the American Medical Association quite frequently has referred to the fact that the published death rate of the City of Wilmington was extremely high, though no comment has ever been observed on the occasions on which it was correspondingly low. It was thought that some comment on the conditions which in Wilmington tend to account for the fact that the death rate is not so favorable as that of some other cities would be of value.

It is a fact well known, at least in the state, that there was an appreciable loss of population in the city during the interval between the census years 1920 and 1930, insofar at least as the number of residents living within the city limits was concerned. At the same time, the population of rural New Castle County arose sharply in number. Specifically the population of Wilmington decreased from 110,168 to 106,597 while rural New Castle County increased from 38,071 to 52,435. It seems quite obvious therefore that the change was to be explained entirely by a movement of large numbers from the city to surburban developments, for the benefit of taxation relief or for other purposes, their domiciles being changed while their business addresses were retained. Especially, too, it is to be noted that their medical connections were little disturbed, the advantages of treatment in the city hospitals being retained and these institutions still being sought if hospital admissions became

*Executive Secretary, State Board of Health.

necessary. It is convenient to assume that the movement of population was a gradual one, extending over the ten year period and even to the eleventh year. It is a matter of opinion whether or not the movement has now halted. One of the features of the population movements of the past three years is the halting or even the reversal of the movement of population from rural communities to the cities. It is especially to be observed that while the population of the city decreased the decrease was entirely of the white element of the population, the number of the colored in the city having increased.

The following tabulation gives the population of the city estimated as above for the intercensal years, the number of deaths which were reported each year and the rate per 1,000 of population. This is a crude rate, unstandardized and uncorrected.

Year	Wilmington Population	No. of Deaths	Wilmington Rate (Per 1000)	Death Rate of State ex. of Wilmington
1920	110,168	1563	14.2	14.9
1921	109,810	1362	12.4	14.1
1922	109,453	1390	12.7	13.7
1923	109,096	1550	14.2	14.2
1924	108,739	1405	12.9	13.4
1925	108,382	1435	13.2	13.7
1926	108,025	1615	14.9	14.7
1927	107,668	1461	13.6	12.3
1928	107,311	1516	14.1	13.2
1929	106,954	1428	13.3	13.1
1930	106,597	1554	14.6	12.9
1931	106,253	1478	13.9	13.7
1932	106,253	1390	13.1	12.7

The tabulation also shows the death rate of the state, exclusive of the City of Wilmington, for the same years. At first glance it would appear that the rate of the state exclusive of Wilmington shows a trend indicating diminution greater than does the city. This may be an entirely erroneous conclusion if the estimate of population is a faulty one.

In several particulars the composition of the population of Delaware is an unusual one and the characteristic is well seen also in respect of the population of the City of Wilmington. There is in both an over representation of population in the higher age groups at the expense proportionally of those of young or middle life. The extent to which the Wilmington population differs from the population of the United States in its entirety can be appreciated if the entire population of the Union (122,775,046) were divided into units each of the same size as the population of Wilmington (106,597), each unit showing the same distribution of population into age groups as is to be found in the Union as a whole.

Age Groups	Population of Wilmington 1930 Census	Distribution of U. S. Pop. at same census Total Population
-1	1471	1904
1-4	6475	8040
5-9	9464	10954
10-14	9825	10431
15-19	9245	10038
20-24	9812	9445
25-29	9068	8544
30-34	8764	7925
35-44	16773	14944
45-54	12066	11312
55-64	7669	7295
65-74	4287	4102
75+	1678	1663
Total	106597	106597

(Both tabulations have been corrected for those of unknown ages.)

It will be seen that every age group of the Wilmington population up to the age group 20-24 is smaller in number than is the corresponding group of the United States as a whole, the shortage in these younger age groups being made up by the increases in the older ones.

In the same way, a comparison of the population of the city with a characteristic group of the same number from the urban population of the United States may be made.

Age Groups	Population of Wilmington 1930 Census	Distrib. of urban population of U. S. at same census
-1	1471	1660
1-4	6475	7046
5-9	9464	9611
10-14	9825	9207
15-19	9245	9308
20-24	9812	9934
25-29	9068	9550
30-34	8764	8934
35-44	16773	16567
45-54	12066	11937
55-64	7669	7391
65-74	4287	3960
75+	1678	1492
Total	106597	106597

There are at least two important implications resulting therefrom. The deficiences of the younger groups—themselves the effect of the low birth rate which has been a characteristic of the vital statistics of the state for some years—indicate that in all probability low rates will prevail in the future. It is also indicative of the near approach made by the city to a condition of stabilized population, growth hereafter to be the result rather of immigration than of increase through births. Moreover, and this is the aspect of the question to which it is desired to call particular attention, the two-thirds of the population to be found in the age groups be-

yond 15-19 are exposed to death rates, with one exception, greater than prevail before that age. One-third of the population has provided recently about one-fifth of the deaths, the remaining two-thirds being subject to the greater and more unfavorable hazards.

The following table shows the probable or computed number of deaths in Wilmington and in a similar sized unit of urban United States population, if there were applied the death rates by age groups, which was experienced in the United States in the year 1920.

Age groups	Wilmington	U. S. Death Rates 1920	Number of Computed Deaths	Unit of U. S. urban populaton	U. S. Death Rate 1920	Number of Computed Deaths
-1	1471	96.7	142	1660	96.7	159
1-4	6475	9.8	63	7046	9.8	69
5-9	9464	3.0	28	9611	3.0	29
10-14	9825	2.3	23	9207	2.3	21
15-19	9245	4.1	38	9308	4.1	39
20-24	9812	5.7	56	9934	5.7	57
25-34	17832	6.9	123	18484	6.9	128
35-44	16773	8.3	139	16567	8.3	138
45-54	12066	12.2	147	11937	12.2	147
55-64	7669	23.9	183	7391	23.9	177
65-74	4287	52.7	226	3960	52.7	208
75+	1678	135.1	227	1492	135.1	201
Totals	106597		1395	106597		1372

At least 23 of the deaths (1395 minus 1372) computed as likely to occur in Wilmington therefore may be considered as excess deaths due to an unfavorable populaton distribution.

It has been already said that the movement of population outside the city limits did not relieve the hospitals in the city of the burden of caring for the sick and of providing treatment for any who might become ill. The city hospitals continue to provide treatment not only for Wilmington and rural New Castle County but to an extent for the entire state. If now a statement is sent to Washington of the number of deaths which have been reported in the city during the week, it is difficult to be sure that the report does not include a number of registrations of deaths of non-residents. It has recently been the practice in the central office to "correct" all incoming records by tabulating them according to residence, not by place of death, but such a correction may not be made in respect of those reported weekly to Washington. The importance of this fact is very great. Of 1390 deaths occurring in Wilmington in 1932, no fewer than 469 are tabulated as having occurred in hospitals.

A casual and probably quite incomplete examination of the death certificates of those who died in the hospitals brought to light 13 deaths of non-residents. It is entirely likely that the number was much greater. However, deducting from the total who died in 1932 (1390), the 23 who might be regarded as excess deaths due to an unusual population distribution and the 13 deaths of non-residents lowers the city's death rate to 12.7. If the actual population of the city is greater than the estimate, the death rate is even lower than the above figure.

Still another unfavorable factor in respect of Wilmington is the percentage of colored which go to make up the total population. This percentage apparently increased during the period between the censuses of 1920 and 1930 from 10.3 percent to 11.3 percent. In the experience of the state, the death rate of the colored during a twelve year period has been considerably higher than that of the whites (20.5 to 12.5) and if the colored population is increasing there is also increasing the unfavorable reaction on the death rate of the city. The incoming colored are not gains from natural increase of population, since it is doubtful if there is much if any natural increase, the death rate being approximately equal to the birth rate over a period of years. Rather it is probably an indication of the northward movement of the colored population of the nation which has been a feature of the population movement of recent years. Whether or not that movement has now been halted, it is extremely difficult to say. Its effect on the height of the death rate of the city cannot, however, be disputed.

It thus appears that an unfavorable population composition, the fact that correction for

the hospital deaths of non-residents can with difficulty be made, and the inclusion in the population of a large and probably growing percentage of persons subject to high death rates are obstacles which are preventing the city from presenting rates as favorable as many cities of comparable size of the United States.

MIDWIFERY IN DELAWARE

CLEALAND A. SARGENT, M. D.,*
Dover, Del.

There are one hundred fifty-seven midwives registered and practicing in Delaware. Fifty-one are white and one hundred six are colored. They are located as follows: New Castle, including Wilmington, fifty-nine, Kent County forty-five, and Sussex County fifty-three. The majority of the white midwives reside and practice in Wilmington.

The supervision of midwives is under the direction of the State Board of Health. The practicing physicians have absolute control over the registration of midwives because no midwife may apply for a license until recommended by a physician. After the recommendation of the physician is received by the State Board of Health a public health nurse visits the home and makes a written report upon home conditions, apparent intelligence of the applicant, etc. After the recommendation and investigation, the midwife is required to purchase a regulation obstetrical bag and have it fully equipped. All midwives must apply for renewal of their license on August 1st each year.

Quarterly meetings for midwives are held throughout the state at which time lectures and demonstrations in prenatal care and obstetrics are given. Every midwife is required to attend the meetings unless ill or engaged upon a case. In 1930 the children's Bureau of the United States Department of Labor sent a female physician to the State, upon the request of the State Board of Health, to organize the midwives into classes for prenatal and obstetrical instruction.

The State Board of Health endeavors to enforce definite rules and regulations pertaining to the practice of midwifery. Midwives are not permitted to dispense medicines of any description, to give douches or to perform vaginal examinations unless instructed to do so by a practicing physician. They must meet the requirement of the law regarding reporting of births and in addition must obtain the services of a practicing physician at the first indication of complications. They are also required to report their prenatal cases to a public health nurse who visits the case to instruct the expectant mother in prenatal care and the preparation for delivery. At the time of the prenatal visit, if the nurse sees any indication of complications, she instructs the midwife to inform the family of conditions and induce them to consult a practicing physician.

The practice of midwifery in Delaware has not been a very serious problem. Considered as a whole, the midwives are fully as well qualified as those in many other states. It is true that some are illiterate but many, especially some of the white midwives in Wilmington, are well qualified. There are midwives in the state who have attended from fifty to eighty obstetrical cases annually with very good results. There are a few midwives who should not be permitted to practice. It is not an easy task to eliminate them, first, because they have been recommended by a practicing physician and second, because there is no law prohibiting a friend or neighbor attending an obstetrical case if they do not claim to practice obstetrics or receive pay for their services. If a midwife is not licensed she may attend cases as a friend or neighbor. The number of undesirable midwives is being reduced slowly each year. It is the opinion of the State Board of Health that it is better to license all midwives and have some control over them than to have them practice without supervision. The requirements have been gradually raised to eliminate the undesirables and by this method, with the help of the people demanding more from the midwives, the type of service rendered will be improved.

Complaints received from physicians and laymen are investigated by the State Board of Health and the offending midwife is called upon to explain the situation.

Various methods of checking up on the work of the midwives have been employed. It is very difficult to determine the exact maternal mortality because the complicated cases are either seen by physicians or referred to hospitals. The infant mortality of midwives' cases has been de-

*Director, Division Child Hygiene State Board of Health.

termined for 1932. Since the public health nurses visit all infants whose mothers have been attended by midwives, and only the indigent or lower middle class of those attended by physicians, the comparison of the infant mortality of the two groups gives some indication of the effectiveness of the nurses work and the home instruction given by the midwives.

There were four thousand two hundred eighty-two live births reported in 1932 classified as follows:

	Attended by Physicians	By Midwives	By Others
White	3174	377	11
Colored	269	448	3
Total	3443	825	14

Nineteen and two tenths percent were attended by midwives and eighty and four tenths percent were attended by physicians.

There were two hundred eighty-seven deaths under one year of age. Making the infant mortality sixty-seven per thousand live births for the state as a whole. All infant deaths were checked for attendant at birth with the following results:

Attendant at birth of infants living less than one year:

	Physician	Midwives	Others
White	208	10	2
Colored	25	42	0
Total	233	52	2

The infant mortality of those whose mothers were attended by physicians and midwives is as follows:

	Physician	Midwives
White	65.5	26.5
Colored	92.9	93.7
Total	67.6	63.0

The white and total infant mortality rates of the midwife cases were lower than that of physicians cases. The colored infant mortality of midwife cases being slightly higher than the physician's cases.

Classification of the chief causes of deaths of the two groups of infants revealed the following facts. Percentage of various causes of infant death classified by attendant at birth:

	Infectious and parasitic diseases	Pneumonia
Physicians	7.2%	16.5%
Midwives	13.4%	23.0%
	Diarrheal diseases	Premature birth
Physicians	9.8%	28.5%
Midwives	19.2%	19.2%
	Congenital malformations	Congenital debility
Physicians	8.0%	4.2%
Midwives	3.8%	5.7%
	Injury at birth	
Physicians	5.1%	
Midwives	0.	

Classification of infant deaths at various ages is as follows:

Percentage of infants at various ages classified by attendant at birth:

	Un. 1 day	1 day	1 day-1 wk.	1 wk.-1 mo.		
Physicians	24.2%	7.1%	9.4%	11.2%		
Midwives	5.7%	3.8%	15.5%	11.5%		
	1 mo.	2 mo.	3 mo.	4 mo.	5 mo.	6 mo.
Physicians	9.4%	3.5	6.2	4.4	2.6	5.8
Midwives	7.5%	5.7	7.5	1.9	5.7	2.5
	7 months	8 mo.	9 mo.	10 mo.	11 mo.	
Physicians	4.0	3.1	2.6	2.6	1.2	
Midwives	11.5	7.5	3.8	3.8	0	

For the most part, the percentage of midwife cases dying up to the second month of age was lower than the physicians cases but, with few exceptions, was higher in all the older age groups.

The State Board of Health is desirous of improving the type of services rendered by the midwives and will appreciate the assistance of the practicing physicians in recommending only the competent type of individuals for license and in making complaints against midwives who are not efficient.

A WORLD ON WHEELS

RICHARD C. BECKETT, B. S.,*
Dover, Del.

With the world on wheels today, it is becoming increasingly important that the handling of food and food products be more closely supervised. Each food handler and each proprietor of a food establishment or public eating place can contribute to the fight to prevent the spread of certain communicable diseases.

During the past six or seven years inspections of service stations have been made, particularly of the water supplies and toilet facilities. The number of service stations on the main roads is now just slightly under three hundred. The extent of the inspection work needed for merely these two items indicates the volume of work necessary if inspection work is to be broadened and to include all food establishments. The handling of food at service stations is increasing yearly, although of course most of the service stations dispense nothing but gas and oil.

The water supplies of the approximately three hundred service stations are checked and sampled each year, as well as the toilet facilities. Approximately two hundred signs, consisting of an aluminum disc 8″ in diameter with a Blue

*Director, Division of Sanitation, State Board of Health.

Hen insignia and the words "Safe Water Supply", are fastened to an iron post.

During the past years inspections of restaurants in the various towns throughout the State, excluding Wilmington, have been made. This preliminary survey indicates the need of further inspectional work but before definitely adopting a routine of inspection, insofar as time is available, a warning should be given to all employes concerned and to the proprietors of these eating places. This, I believe, has particular significance with respect to those employes infected with venereal disease. Such a procedure will help to prevent certain fundamental problems connected with a normal communicable disease but now rather tightly bound up with some of our social mores.

Diseases are spread in several ways, chiefly by the infection of milk and other foods, by unsafe water, unsterilized utensils, direct contact, and by droplet infection (coughing).

For the food handler, the points to be considered first are his own personal health and then his habits. Every food handler for his own benefit should have a thorough physical examination and, secondly, because he may become one of the factors contributing to the spread of disease if infected. An examination thoroughly done should be had from a private physician and repeated at least yearly.

As to his own personal habits the chief precautions are to avoid sneezing and coughing, thus preventing droplets of moisture from falling on food or drinks. Observe how often you have seen a soda water dispenser give a sneeze or cough directly over the food he is handling. The second precaution and one which is only common decency but often undone is the habit of washing one's hands thoroughly after visiting the toilet. Both of the above precautions can become a matter of habit, namely, the control of sneezing and coughing and of washing one's hands after visiting the toilet.

How Diseases are Transmitted

Diseases such as typhoid fever, dysentery, diptheria, scarlet fever, septic sore throat (severe tonsillitis) and tuberculosis may be spread by milk. These infections may occur at the source and the place of sale. To play safe, pasteurized milk should be used and served in individual containers. This is one of the important steps every proprietor of an eating establishment could take.

The same diseases may be spread directly by coughing or sneezing on the food which is immediately consumed by the patron. The remedy here is personal habits. Prevent such mishaps by covering the mouth with a handkerchief or other article.

The third common method of transmission of diseases is by the use of unsterilized utensils. The average soda fountain as well as the average restaurant kitchen is ill prepared to properly wash and sterilize dishes, utensils and glasses. Furthermore, at periods of rush, there are usually insufficient glasses, utensils, etc., to avoid their quick re-use. Notice the average soda clerk at noon time. A quick dip in the hot water and washing powder compartment and a quicker dip in the second compartment—in many cases containing lukewarm to cold water and that usual turbid from overuse. The proper washing and sterilizing of utensils at such times is a problem and is one to which the manufacturers of equipment might devote more time.

There are several methods in use. One is of course the use of single service containers which eliminate the glass and ice cream dish. The second method is the use of as hot water as can be stood with a good washing powder and then a rinse in hot water of the same temperature and renewed sufficiently to be effective. Preferably the utensils should be put in a wire crate which is suspended in the second compartment. In this way much hotter rinse water can be used. Furthermore, with these methods, utensils may be left to drain and the towel discontinued. Oftentimes the towel used is dirtier than the recently rinsed cup or saucer.

A third method is the use of a cold water rinse in the second compartment using chlorine as a sterilizing agency. This chemical used with a strength, in the rinse water, of 100 parts per million is effective and also causes no breakage. It is uniformly employed by the Delaware dairymen in this manner.

In the case where single service containers are not used a sufficient supply of utensils, glasses and dishware should be available to provide for the "peak" load.

Next comes the general appearance of the place. The proprietor should insist on strict

cleanliness because the public is becoming increasingly more exacting due to health education by newspapers and the radio. Make an appeal by having clean looking, sparkling, sanitary and well kept places.

Naturally every eating place should have a satisfactory water supply. Such water supplies will be tested by the State Board of Health by merely mailing a postal card requesting such service.

Now we come to the bugbear of all food establishments or at least to a respectable percentage and that is the provision for toilet facilities for both sexes. Such separate toilets should be fly-tight and kept clean and well ventilated. No lavatory or toilet should open off directly from the kitchen. Washing facilities to enable both employes and patrons to wash their hands should be provided. Such places should be placarded with signs stating that hands should be washed after visiting the toilets. Such signs may be obtained from the Division of Sanitation, State Board of Health.

Kitchens should not be used as sleeping quarters. The necessity of this attitude should be self-evident.

We all know that in many cases the public does not appreciate the facilities that many food establishments supply, but gradually the public is beginning to appreciate cleanliness. Nevertheless the owner or proprietor must give some attention each day to such services.

Screening during the warm months should be complete. The reason for this is of course that flies are notorious carriers of bacteria, both harmless and harmful. She is no respecter of bacteria. An indication of what a single fly dropping in a custard or a pitcher of milk or other soft food can do is that several million bacteria can be added at once, and if the food is not kept at almost a freezing temperature (32 degrees F.) or again cooked it may be a living "germ farm", yet without any apparent spoiling of the food within four or five hours time.

Proper refrigeration of foods should be had to prevent spoilage caused by occasional accidents such as described above.

Summary

The main points to be observed by food dispensers and proprietors of food establishments are as follows:

Personal Hygiene

1. Physical examination to see that the person handling the food is physically fit.
2. Always wash hands thoroughly after visiting the toilet.
3. Prevent droplet infection by being on guard when about to sneeze or cough.

Plant Hygiene

1. Provide a safe water supply.
2. Provide clean sanitary toilets or washrooms with facilities for washing patrons hands.
3. Keep food products properly chilled.
4. Keep everything clean, soda fountain, tables, kitchen, etc.
5. Appeal to the public by keeping a clean, sparkling, shiny and sanitary place.

LABORATORY COMMENTS

Rowland D. Herdman, B. S.,*
Dover, Del.

The activities of the Bacteriological Laboratory of the State Board of Health are confined to (1) the examination of specimens in the control of communicable diseases, and (2) to the examination of specimens of water, milk and other foods for the protection of the public against diseases transmitted in this manner. Samples of urine are also examined.

For the benefit of the new physicians in this state, and those not familiar with the work of the laboratory, I will give an outline of some of the tests by which the laboratory is able to assist physicians in the diagnosis of communicable diseases. Members of the medical profession throughout Delaware are free to call upon the laboratory for any of these services. Outfits for mailing specimens to the laboratory can be obtained at all times from our regular mailing case stations, the offices of the County Health Officers, or from this laboratory. These mailing cases comply with federal postal regulations and are designed to provide the most satisfactory type of specimens for examination. They are expensive, and each physician is requested to order only a reasonable number and to take the proper care of them, so that waste may be prevented.

Diphtheria

Loeffler blood serum cultures from throat or nose for the diagnosis or determination of the

*Director of the Laboratory, State Board of Health.

carrier state of diphtheria are incubated at body temperature for from 6 to 24 hours and examined for diphtheria bacilli. All cultures for release are incubated for approximately 24 hours and examined. Results, when requested, are telephoned or telegraphed to the physician at his expense.

VIRULENCE TESTS

Not all diphtheria organisms produce toxin. Some are harmless. A virulence test is made when requested on cultures from carriers and on those cases that remain positive for many weeks. A virulence test is considered needless in active cases of diphtheria.

VINCENTS ANGINA

When requested, this examination of direct smears from nose and throat swabbings is made for the spirochete and the fusiform bacillus which are associated with vincents angina.

TYPHOID AND PARATYPHOID FEVER

During the first week of typhoid or paratyphoid fever blood cultures are positive in a large percentage of the cases. The regular typhoid outfit or the keidel tube may be used for collecting the blood. There is no test so valuable or reliable as the blood culture in diagnosing typhoid and paratyphoid fever.

After the first week of patient's illness, the agglutination test is used. The great value of this test cannot be realized unless two or more specimens are taken at intervals of three or four days. A strong reaction may be due to antityphoid or antiparatyphoid inoculation or other causes. A marked increase in the strength of the reaction on the second or third specimen is most significant.

STOOLS AND URINE CULTURES

Cultivation of typhoid and paratyphoid bacilli from stool and urine specimens is done to assist in the diagnosis, and to detect carriers; also to know when to release patients from isolation. The regulations of the State Board of Health require two successive negative cultures of stools and urine specimens, collected not less than 24 hours apart, before a patient can be released from isolation.

TUBERCULOSIS

Specimens of sputum are examined by the antiformin method for the tubercle bacilli. Repeated examinations are frequently necessary to demonstrate the presence of tubercle bacilli. A negative report on a single sample of sputum may not mean the tubercle bacilli are not present; usually large numbers must be present in order to detect them in this way. If the sputum or other body fluids are negative and tuberculosis is still suspected, the physician should request that additional specimens be examined by guinea pig inoculation. This method requires about six weeks and involves considerable work by the laboratory, therefore it is not made as a matter of routine.

SYPHILIS

Each specimen of blood and spinal fluid to be tested for evidence of syphilis is examined by two distinct and widely accepted methods, the Kahn precipitation test and the Kolmer Quantitative complement fixation reaction.

The Kahn Precipitation test, as done routinely in this laboratory, is identically the same as that performed in laboratories of the Michigan Department of Health. The technic is much simpler than the Wassermann. The patient's blood serum, antigen and physiological saline are the only re-agents used in this test. The Wassermann reaction requires the use of six re-agents. The Kahn test, though simpler in technic, requires about twice as much serum as the Kolmer Wassermann. The consensus of opinion among leading serologists and immunologists is that two or more types of tests are necessary for a correct laboratory diagnosis of syphilis. Careful research and checking of laboratory results with clinical symptoms have revealed the fact that while in the majority of cases the two tests check remarkably well, a few positive cases are picked up by each test alone that would have been missed by the use of only one test.

GONORRHEA

In both the male and the female, the best specimens for examination are smears carefully made from the point of discharge of purulent material. Material which has already exuded and pus from the vaginal wall is usually unsatisfactory as gonococci are obscured by a multitude of other bacteria.

The complement fixation test is valuable in suspected cases of gonorrhea arthritis, salpengitis or old chronic gonorrhea. For this test blood

is submitted in one of the regular Wassermann outfits. A request should be made for the complement fixation test for gonorrhea.

Undulant Fever

Undulant fever is seldom recognized clinically. The agglutination test is a valuable aid in the diagnosis of this disease, but early and late cases may react too weakly to be completely dependable. When a sufficient quantity of blood is submitted for the agglutination test for typhoid, the agglutination test for undulant fever is also made. Either the regular typhoid or the Wassermann outfit should be used for submitting blood for this test.

Typhus and Spotted Fever

The agglutination test for typhus and spotted fever is known as the Weil-Felix test. It is a valuable aid in diagnosis. Two or more specimens of blood, as in typhoid, are desirable. This test depends upon the agglutination of blood serum upon certain strains of the proteus group (Proteus X19). This proteus, like bacilli, is found associated with typhus and spotted fever but is not the cause of the disease.

Tularemia

The agglutination test is a valuable aid in diagnosing tularemia, but as in typhoid fever, several specimens are desirable unless the first gives a very strong reaction. Either the typhoid or Wassermann outfit should be used in submitting blood for this test.

Rabies

Examination for rabies is made on preparation of brain tissue for Negri bodies. Negri bodies are always found if the animal was rabid and not killed too early.

A Suspicious or Biting Animal

When a dog acts suspiciously, or when he bites a person, he should not be killed. On the contrary, the dog should be securely chained or confined in a safe place and provided with his regular food supply during an observation period of at least two weeks. If available, a veterinarian should observe the dog. If the dog remains well and healthy throughout the two weeks, he may be released and any person whom he may have bitten need have no fear of developing rabies. If, on the other hand, the dog should manifest the symptoms of rabies, he should be permitted to die. Then the head should be detached, packed in ice in a double tin-lined container, and rushed to the laboratory. After the results of the examination are known, plenty of time will remain for starting the Pasteur treatment in persons who have been infected. An exception may be made of a bite on an exposed part without clothing. It is well known that the period of incubation is much shorter for bites on the face and hands. In such cases treatment should begin at the earliest possible time.

Urine

Samples of urine are examined chemically for specific gravity, reaction, albumen, sugar urea, and the sediment examined microscopically for pus, casts, etc.

Miscellaneous Diseases

Laboratory service is also available to assist physicians in the diagnosis of communicable diseases not listed here.

CONTROL OF VENEREAL DISEASES

J. B. Derrickson, M. D.,*
Frederica, Del.

Venereal diseases are justly regarded as the greatest of modern plagues, and their prophylaxis is the most pressing problem of preventive medicine that confronts us today, as they are a menace to the clean-living public as well as to the licentious. The history of preventive medicine can present no greater tragedy than the home invaded by syphilis or gonorrhea.

There are three venereal diseases: syphilis, gonorrhea and chancroid. In order to have a clear understanding of the problem of venereal prophylaxis, it is necessary to have a knowledge of the essential features of these preventable infections. Two of them, syphilis and gonorrhea, are of great importance, because they are very prevalent and very serious infections with grave consequences. Gonorrhea is the great preventer, syphilis the great destroyer of life.

Gonorrhea is commonly regarded as not a very serious disease but this is erroneous. In infants infection with the gonococcus at birth causes an acute opthalmia which is responsible for about 40 per cent of the inmates of blind asy-

*Health Officer for Sussex County.

lums. Gonorrhea is the chief cause of sterility in women infected by it, there is said to occur inflammation of the female pelvic organs, leading to chronic invalidity. The history of these two banes, of humanity is an important element in the social history of mankind. One has but to consider the clinical manifestations of syphilis and gonorrhea to appreciate the gross amount of physical disability which they cause; hemiplegia, optic neuritis, iritis, tabes paresis, gonorrheal arthritis, endocorditis, and the varying manifestations of congenital syphilis, such as deafness, interstitial Keratitis and mental defectiveness are all too commonly encountered. In addition to the effects on the individual members of the community, the cost to the state is an important economic item.

The importance of venereal disease prevention is at once evident from two well known aspects of the problem, namely the widespread prevalence of gonorrhea and syphilis and the tragic consequences of the infection with either of these diseases. The actual incidence of venereal disease being to a large extent dependent upon social and economic conditions, is less exclusively a problem of the medical profession and must be attacked from many other angles.

The control of the disease in a particular individual, its limitations to the point of initial infection, and the prevention of late and serious complications rest, however, almost solely with the physician. This special medical responsibility in the control of venereal disease may be resolved into three parts: (1) Early and accurate diagnosis will permit the institution of treatment at a time when the disease is still localized and thus aid in the prevention of the infection of other persons. (2) Proper and adequate treatment, as a rule, will result in the complete cure of the disease, while ill chosen forms of therapy may contribute to its spread. (3) Rigid criteria of cure will protect the patient from a possible recrudescence and will minimize the danger of contagion.

The special aspects of the control of venereal diseases in women are concurred chiefly with anatomical differences in the character of the lesions and the special danger of the extension of gonorrhea to intraperitoneal structures. The successful treatment of a case of syphilis depends largely upon the first physician who sees the patient, for if intensive specific treatment can be begun in the seronegative stage of the disease, few cases will become generalized. To accomplish this, the recognition of the primary lesion is essential. The average incubation period of syphilis is from 15 to 21 days, but because of a considerable variability, examinations after a possible exposure should be made repeatedly over a period of several weeks. Any abrasion should be regarded with suspicion as the possible site of a future lesion, any vesicle, papale or reddened spot as a possible developing chancre. In the female it must be remembered that although the usual lesions are readily accessible upon the labia and about the vaginal introitus, many common, though perhaps less frequent ulcerations, may escape attention if situated higher in the vagina, or, if located on the cervix, be mistaken for a simple lesion.

The typical chancre, developing as a single, painless ulcer with inderated edges, is easily recognized, but where bacteriological corroboration is advisable, and for the many less usual forms, laboratory aid in diagnosis is essential. It is decidedly unjustifiable, however, to wait for a positive diagnosis until the fourth or fifth week, when the Wassermann reaction becomes stabilized, for this delay represents the crucial period in which generalization of the disease is occurring. Early diagnosis requires, therefore, bacteriologic search for the treponema pallidum in the secretions from the base or side of the ulcer. Such secretions may be examined at once by means of the dark field microscope or specimens of secretions drawn up and sealed in glass capillary tubes and sent to a laboratory for study.

Active treatment of a suspicious local lesion may make the finding of the organisms difficult and should not be begun until a positive diagnosis has been made or until negative reports have been received on at least three specimens. Finally, it should also be remembered that another group of lesions, developing somewhat later and found in the region of the female genitalia and perineum, the condylomata lata, should lead to blood studies of the patient as a probable syphilitic.

The specific treatment of syphilis is a complicated and arduous matter and requires considerable skill on the part of the physician and perseverance on that of the patient for its successful carrying out. Before attempting such

treatment the physician should consider his qualifications for administering it, and the patient should be impressed with the importance of a long period of observation and successive courses of therapy. Nothing in the treatment of venereal disease is more futile than the haphazard employment of arsenical and mercurial preparations or the discontinuance of treatment before a full cure is established.

In the early cases, in which a positive Wassermann has never been obtained, treatment should be kept up for a two year period, while at the other extreme in cases in which the Wassermann reaction remains persistently positive, treatment should be continued to the limit of tolerance for at least four years. Until such efforts have been made toward the establishment of a cure, the physician has not discharged his obligation to the patient.

The extension of gonorrhea in the female beyond the cervix or urethra is only slightly less serious than the danger of the generalization of syphilis. Here, too, early diagnosis and the institution of proper precautionary measures are vital for the limitation of the disease.

During the usual incubation period of two to ten days following exposure to a gonococcal infection, the sudden development of such symptoms as urinary frequency, or vaginal discharge should lead to an examination. As in the case of early syphilis a definite diagnosis upon which a long continued course of therapy can justifiably be prescribed must depend upon bacteriologic examination. For this purpose, specimens of the discharge must be taken from the urethra and cervix, and, if secretion is obtainable, from the openings of Skene's and Bartholin's glands. In the acute stage of the disease, the diagnosis is easily made microscopically, for a preparation suitably stained by the Gram method will be found to contain numerous introcellular Gram —negative organisms. In the later stages, the organisms are less numerous, and repeated specimens must be examined before gonorrhea can be excluded. Culture of the gonococcus is difficult but may be advisable in cases with possible medico-legal aspects and others in which a positive diagnosis is essential.

With the establishment of a diagnosis, all therapeutic efforts should be directed toward the restriction of the disease to the original sites of infection. For this purpose, complete rest and the avoidance of any form of active treatment which might irritate the mucosa of cervix or urethra are essential. The patient should be kept in bed without active treatment, except for measures of cleanliness, for which hip baths and, at the most, a mild douche may be ordered. With the subsidence of the acute infection, the patient may cautiously be allowed to increase her activities, but any sexual excitement should be specifically forbidden. At any suggestions of lower abdominal tenderness, indicating tubal involvement, the period of rest in bed must be extended and, in all cases, restriction of activity should be enforced at the time of several succeeding menstrual periods. With the disappearance of the manifestations of acute inflammation, more active treatment may be directed toward residual foci of infection. Even in the later stages of the disease, however, the passage of time is probably the most important curative factor, although special treatment may be necessary for the cervical canal and Bartholin's & Skene's glands. The surgical treatment of gonorrheal salpingo—oophoritis should particularly be delayed as long as possible.

As in the case of syphilis, it is extremely important that the patient be kept under observation until a definite standard of cure has been attained. A practical standard may be set up as follows: (1) Absence of all clinical signs of disease; (2) Absence of all bacteriologic evidence of infection in the cervix, urethra, Skene's and Bartholin's glands, as proved by successive examinations of smears obtained immediately after two successive menstrual periods. (3) Absence of any palpable signs of disease on biennial examinations. Six months after these conditions have been complied with, the patient may be regarded as cured.

Although the physician's particular responsibility is his personal patient, his obligations also extend to other persons who might become infected. The prevention of a communication of the infection depends almost entirely upon the physician's instructions to his patient. To give these warnings proper weight, an absolutely correct diagnosis is the first essential. To suggest to a woman that she has gonorrhea on the evidence of an unexamined leucorrheal discharge is to risk a major social and medical error. To withhold the nature of her illness from a patient, once the diagnosis is established, is to as-

sume a responsibility which is not justified except under special circumstances, and involves grave danger to other persons. A clear explanation should be made to infected persons through sexual intercourse and by infected articles of clothes, towels and toilet articles. The special danger of gonorrhea in female children should be emphasized. As a rule, little can be accomplished by searching for persons to whom the disease might already have been communicated. When the patient is a married woman, however, the husband should be sent for, examined, and given proper treatment.

Following the subsidence of the acute stages of the disease difficulty is sometimes experienced in convincing the patient that the possibility of spreading infection persists until adequate treatment has been completed, and a definite standard of cure, such as the items outlined above, has been met. Marriage should certainly be prohibited during this period. If marriage has already taken place contra-ceptive measures should be used that a healthy infant will be born.

The presence of gonorrhea or syphilis in the pregnant woman is of course a special problem calling for immediate and decisive therapeutic action. The physician's less definite duties, such as the general education of his patients in the subject of venereal disease, his support of social organizations for their control, and his compliance with the statutes providing for the reporting of cases can only be mentioned in passing. Prompt diagnosis, the immediate institution of adequate treatment, the enforcement of a definite standard of cure, and detailed instructions to prevent the further communication of the disease remain the physician's professional responsibility in the prevention of venereal diseases.

THE MANAGEMENT OF ONE THREATENED EPIDEMIC OF DIPHTHERIA

ERNEST F. SMITH, M. D.,*
Dover, Del.

On November 30, 1932, a death from diphtheria was reported in the family of Mr. B. who lived in the country one-half mile from any other house. Upon arrival there, we found a girl two and one-half years old dead, and three women (neighbors), Mrs. M, Mrs. G, aud Mrs. D, who had just finished cleaning up the house and preparing the dead child for burial. They said they had been in the house about one-half hour. Mr. B. and his family had gone to the home of Mr. B's mother, Mrs. H.

Cultures were taken from the throats of the three women and the dead child. Those from Mrs. G and Mrs. M proved to be positive, as well as the one from the dead child. We then went to the home of Mrs. H, where Mr. B and his family were staying. Here we found Mr. and Mrs. B, their six year old son, and baby, four other adults, and one other child. All were cultured both nose and throat. Cultures from Mr. B, his six year old son, and three other adults were positive, but there were no clinical symptoms. They were all given immunizing doses of antitoxin. Cultures from their noses and throats remained positive for varying periods up to three weeks. There were no clinical cases of diphtheria in this family.

There were no children in the family of Mrs. M and at the end of five days we had two consecutive negative cultures from her nose and throat.

In the home of Mrs. G, there were seven children ranging in age from sixteen years to nine months. Four children had had the toxoid immunization in school. The other three children and the mother were given immunizing doses of antitoxin. The noses and throats of all were cultured on December 5. These cultures showed positive results for eight persons. One of the boys thirteen years of age, who had been immunized previously in school, showed almost a pure culture from the nose which persisted for two weeks. Cultures in this family were all negative at the end of three weeks. There were no cases of the disease.

On December 2, we were notified of a case of diphtheria, and probably a second case in the family of Mr. W.

On arrival at 9:30 A.M. we found the father holding a little girl of three, and the mother, a girl of two years, both with well developed case of laryngeal diphtheria. Each was given a 10,000 unit dose of antitoxin immediately. There were six children in the family ranging from eight years to six months. The father, mother, and one child were given immunizing doses of

*Health Officer for Kent County.

antitoxin. Two of the children had been immunized in school nine months previously, and the baby was at the home of Mrs. W's sister. The sister and the baby had visited Mrs. W on November 30. One hour after receiving the dose of antitoxin, the two year old child died. The other one was given five more 10,000 unit doses in the next fifteen hours and recovered. No other cases occurred in this family. All the family except the father and one child seven years old, who had been immunized by toxoid, showed negative cultures in twelve days. They remained positive for three weeks.

The home of Mrs. W's sister was visited and the family, consisting of husband and wife, their two children, the husband's mother, and the six months old baby of Mrs. W were cultured. The husband, wife, and husband's mother were positive. All the family except the two children who had been immunized previously were given immunizing doses of antitoxin. These people remained positive for five days—no cases.

Mrs. T, a neighbor, was at Mrs. W's when we arrived, helping with the work. She was given 1,000 units of antitoxin and remained there in quarantine. In getting the history, we learned that Mrs. T's husband and their four children had spent the day of December 1 there. Two children in this family had been immunized previously. The other two were given immunizing doses of antitoxin, cultures were taken from all of them, and all were positive for varying periods up to three weeks.

On December 28th, the family physician called to report that the seven year old girl in the family had what appeared to be clinical diphtheria. She had had 1,000 units of antitoxin on December 2 and was given 10,000 units by the physician at this time. Cultures on December 28 and 29, however, proved negative.

On December 30, a severe attack of serum sickness began which lasted five days with complete recovery.

INTERESTING THINGS IN CONNECTION WITH THIS OUTBREAK

1. The fact that two of the three women who had been in the B's house only one-half hour showed positive cultures.
2. The number of persons showing positive cultures, without clinical manifestations.
3. The protection given by toxoid, particularly in the case of Mrs. W's children who were in contact almost continuously with a very virulent form of diphtheria.
4. The great advantage of active immunization, when we consider that these two children both died a few hours after the physician had been called. Notwithstanding the fact that these three cases were in the same rural community, about two miles apart, we could establish no connection between the two cases.
5. Twenty-four children in the school room attended regularly up to December 29, by the boy in the family of the first child that died, all showed negative cultures.
6. Persons who have been rendered immune by toxin-antitoxin or toxoid as well as immune adults, may be carriers of the disease.

QUESTIONS WHICH ARISE

1. Are diphtheria bacilli much more widespread than we have thought?
2. Did all these persons get the organisms from the original case, directly or indirectly?
3. Were we dealing largely with non-virulent organisms? (Certainly in the three clinical cases, we were dealing with a very virulent one.)

This article is not written with the idea of giving any scientific information, but rather to show some of the ways in which diphtheria may be spread, the value of immunization with toxoid or toxin-antitoxin in individual cases, and the possibility of control of threatened epidemics. It also shows clearly the fact that children who have been immunized may be carriers of the disease to the unprotected. This shows the importance of immunization of children as soon as they become susceptible to the disease, at six to eight months of age. It also shows the importance of culturing contacts before they are released even though the period of contact be ever so short.

I sometimes wonder if we, members of the medical profession, have gotten to the place where we take newer methods for granted and have forgotten the horrors of epidemics of the past, of diphtheria for instance. How helpless

the physician was before the discovery of antitoxin!

The bacillus of diphtheria was first cultivated and described in 1884 by Loeffler. Six years later, 1890, diphtheria antitoxin was discovered by Behring and Kitasato. Before this time, the mortality in severe epidemics was frightful and the treatment ineffectual.

With the coming of antitoxin, the morbidity was lessened somewhat and the mortality very much. Then came active immunization with toxin-antitoxin or toxoid, which makes it possible to immunize all persons. Still we have deaths from diphtheria. This is due in almost all cases to the antitoxin being administered too late or in insufficient dosage. The reasons for late beginning of specific treatment are, 1st: The physician is not called in time. 2nd: Hesitation on the part of the physician to give antitoxin to a patient when he is only slightly suspicious of diphtheria, or waiting to hear the result of the laboratory examination of a culture. As to the first reason, there is not much we can do except by educating the people to call the physician early. As to the second, I feel that if the physician would give a dose of antitoxin on the first visit, if there is the slightest suspicion of diphtheria, unless he is in a position to watch the case very closely, many deaths may be averted.

TUBERCULOSIS IN DELAWARE

GERALD A. BEATTY, M. D.,*
Marshallton, Del.

During the past thirty years there has been a remarkable change in the status of tuberculosis in regard to its prominence as a cause of death. A consistent and edifying, though gradual, decline in the annual death rate from this disease is to be noted throughout the country. In this period it has fallen from its position as chief cause of death to sixth in importance. This, of course, is partly due to an increase in other diseases which have superseded it, but chiefly because of a national intensified attack on tuberculosis with its subsequent decline. In 1900, the death rate per 100,000 from tuberculosis in U. S. registration area was in the vicinity of 225. In 1925, this had fallen to 85. The same trend is seen in Delaware, where in 1910 the death rate was 205, in 1931, 86, and in 1932, 71.

These figures are indeed gratifying and a credit to the Medical profession. It has been made possible only by the untiring efforts of the physicians and assisting organizations, in diagnosis and proper supervision and where possible, segregation of the active case. But when one contrasts it with the several other infectious diseases, such as cholera, smallpox, yellow fever, typhoid etc., it has not yielded nearly so dramatically to science. Those latter now occupy a position in the medical museum, while tuberculosis still maintains a conspicuous place in the ills of mankind. Tuberculosis in cattle is almost extinct because the focus of infection has been eradicated. In this, the Veterinarian had implements which the physician had not. But the physician does have implements to further attack this disease; true, they are not so powerful as the Veterinarian's subcutaneous dose of tuberculin. However, they are sufficiently strong so that tuberculosis mortality statistics could be in a few years greatly reduced and eventually, possibly be placed in the museum along side of typhoid fever.

But first let us acquaint ourselves with the present status of tuberculosis in the state. All of the tuberculosis beds in Delaware are under the supervision of the State Board of Health. They comprise the wholly inadequate number of 114, 86 for white patients and 28 for colored patients. This, to my mind, constitutes the greatest present hindrance in the fight on tuberculosis. When one considers that at present there are 33 female patients on the waiting list for admission to Brandywine Sanatorium, and that a female patient waits from seven to eight months for admission, one can probably understand the difficulties under which the fight goes on. One specific case,—that of a woman who recently died at the Sanatorium—illustrates this point emphatically. When first seen in clinic she was a unilateral advanced case which under pneumothorax or other collapse therapy would probably respond very well to treatment. At the time of her admission seven months later, the contra-lateral lung was more extensively involved than the first. No collapse therapy could be instituted and the patient died a month later.

*Assistant Director, Brandywine Sanitorium.

With prompt collapse of the diseased lung and consequent elimination of the focus of infection, which would prevent the "seeding" to the other side, this patient probably would be alive today and in good condition.

The great majority of patients admitted to the Sanatorium are moderately or far advanced. The degree of advancement would be much reduced if there was no such nuisance as the "waiting list". In the past session of the legislature, a bill for $100,000.00 passed both houses but, alas, the money did not appear to be available. Had the bill become valid, it would have almost, but not quite, dispensed with the "waiting list".

It can readily be seen therefore, that the physician's strongest implement for segregation and treatment of the open case, the sanatorium, is at present hopelessly inadequate, and for a time, it must remain that way. It is to be hoped, however, that the next session of the Legislature will not adjourn without taking definite action so that the patients clamoring for admission can be immediately hospitalized and this can readily be done if the family physician takes an active part in the fight for better facilities.

Another powerful weapon, and one, we must admit, that is to some extent being neglected, and in some cases actually frowned upon both by laymen and physicians, is surgical interference. Such measures as artificial pneumothorax, phrenicectomy, thoracoplasty, have long since gone beyond the stage of experimentation. They are not mere playthings in the hands of the phthisiologist, but are definite and valuable adjuncts to the treatment of tuberculosis, universally accepted and practiced by all the authorities in the field of tuberculosis. In some cases they are even more important than bed rest; certainly in indicated cases they are equally valuable, very often being the deciding factor in a patient's recovery.

Recently 200 consecutive admissions to the tuberculosis sanatorium of the University of Michigan, which is under the able and active direction of the country's foremost thoracic surgeon, John Alexander, were studied. 76% of these patients were given the benefit of collapse therapy at some time in their period of treatment. Dr. Alexander writes: "There is a certain proportion of cases, however, in which bed rest is not sufficient to produce an arrest of the disease, and for these cases more intensive rest is necessary. This is secured by pulmonary collapse which causes a partial or complete rest of the diseased lung, which is induced by phrenicectomy, artificial pneumothorax or thoracoplasty. This type of treatment is without doubt the most valuable contribution to the therapy of pulmonary tuberculosis since Dettweiles first introduced rest in 1870. Through it the most favorable conditional requirements for repair of the diseased lung are secured." To understand the logic of this, one only needs to consider that even in a patient at absolute rest, he breathes approximately 28,000 times in 24 hours. Though he may be at absolute rest, without collapse therapy his diseased area is not. Since at some time or other it is indicated in the great majority of the tuberculous, failure to utilize it speaks of neglect.

As E. S. Mariette says "The results of collapse therapy are twofold. First, mechanically. That is, the lung is compressed, cavity walls are united, the diseased area is greatly reduced and the formation of fibrosis is hastened; and second, physiologically, or the removal of pus as shown by the disappearance of constitutional symptoms, due, of course, to the fact that the contents of the lung are squeezed out in much the same manner as water is squeezed out of a sponge and cannot reaccumulate". Thus one might say that collapse therapy produces a "physiological amputation" of the lung and gives the body almost, if not just as much relief as does the removal of any purulent area such as in appendectomy or the draining of a badly infected sinus".

Phrenic resection, or phrenic exeresis, is the safest, easiest, and simplest method of pulmonary collapse, because when the nerve and its accessories are cut the diaphragm becomes paralyzed and atrophied. Its elevation varies usually from one to three inches, depending on whether or not it is bound down by adhesions. By this procedure, 25% to 30% collapse can be obtained. In some cases, this operation is sufficient to close cavities or collapse diseased areas. In others it is used in conjunction with artificial pneumothorax to obtain the desired result. It is always done as a preliminary to thoracoplasty.

Extra pleural thoracoplasty is by far the most radical form of collapse therapy, yet it has its definite place in the surgeon's armamentarium. It is used only as a last resort when collapse is important and cannot be obtained by any other method, and consists usually of removing a section of the posterior lateral part of the ribs, the number determined by the extent of the lesion. However, in cases with large apical cavitation, O'Brien of Detroit removes all of the first and second ribs, and in some cases sections of the sternum. In well selected cases the mortality is no higher than for any major surgery.

All of these methods of collapse therapy are at the disposal of physicians of Delaware. It is hoped they will put it to good use. The first decision the conscientious physician must make, once a diagnosis of pulmonary tuberculosis is made and before beginning home treatment, is as to whether or not the patient will receive maximum benefit from bed rest alone, or in conjunction with some method of collapse therapy. At present 44 cases of artificial pneumothorax are being maintained at Brandywine Sanatorium. Three of this number are bilateral.

Only recently has it become possible for us to utilize the advantages of phrenicectomy and thoracoplasty. To date 15 phrenicectomies have been performed with excellent results. The first thoracoplasty has been done with what we believe will result in complete closure of a cavity impossible to obliterate by any other method.

The last method of control of tuberculosis to be discussed, and the method which will eventually eradicate the disease is one which to date has been sadly neglected and one which brings us into the field of preventive medicine. It is that of case finding. Time has been allotted at the Delaware State Medical Convention in September to discuss this vitally important phase of the problem. An attempt will be made on rather on extensive scale, to discover all contact children, to skin test as many as possible, and to x-ray the reactors. A certain proportion of childhood and minimal adult lesions will undoubtedly be discovered which cannot be determined by any other means. Thus the open case of tomorrow is prevented by discovery of the condition in its incipient stage, when the treatment is comparatively simple, and the results excellent.

As to the formation of a program, how it shall be done, and who shall do it, is to be decided by the State Medical Society. The problem is being mentioned now so that the society members may be aware of it before hand and thus discuss it and vote on it more intelligently at our Fall Meeting.

If one questions the advisability of instituting such a program, let us see what is the current opinion on the subject by the country's leading authorities. J. A. Myers in the preface to his excellent text book "Tuberculosis among Children" writes, "Just as long as children, who have been exposed to tuberculosis, are neglected (denied the advantages of skin test, x-rays and when possible, removed from contact) there will continue to be a crop of tubercle bacilli causing great destruction among young adults and spreading to the bodies of more children. Thus a vicious circle exists". The same author in an article recently printed in the A.M.A. Journal (June 24th, 1933) says, "That the tuberculin test is the finest screen for detecting the persons of a community who have foci of tuberculosis in their bodies, is no longer doubted, but the tuberculin test is only part of the examination; that the roentgenogram of the chest of positive tuberculin reactors is another part of a very satisfactory examination almost everyone admits."

H. D. Chadwick has recently written, "More children and adolescents die from tuberculosis than from any one of the other more common diseases of childhood. This is because the disease in the primary form produces no characteristic symptoms by which it can be recognized or even suspected and the changes in the lung are so slight that they can not be detected by physical examination. We, therefore, are called upon to diagnose a condition without physical signs or symptoms calling attention to its presence. Fortunately we have two very valuable procedures that enable us to do this; namely, the tuberculin test and the x-ray.

It is earnestly hoped that this modern method of case finding will be instituted in Delaware this fall. We, therefore, urge each physician to give it individual consideration and to discuss it favorably in September.

MISCELLANEOUS

NEW YORK, July 26—"Suicidal" was the word used here today by Dr. Kendall Emerson to describe the cutting of government health department budgets to the extent of impairing their service. Dr. Emerson is the acting executive secretary of the American Public Health Association, and he spoke over the National Farm and Home radio network.

"The rule usually followed in effecting public economies is to make cuts where party or personal interests will suffer least", said Dr. Emerson. "Precious little attention is paid to the relative importance of the various functions of government, a great deal to the importance of the political neck upon which the axe of economy is to fall."

"We are all convinced that governments can be run on far less than some have led us to believe was necessary. Anyone who attempts to check the rising tide of economy will meet with instant popular disapproval. But we must separate the essential from the non-essential. Above all we must have protection against the menace of epidemic diseases which holds in itself far more public danger than the peril that lies in unjust laws, fire and banditry, all combined."

Dr. Emerson deplored the fact that the nature of public health protection is such that the individual goes about his business oblivious of what it costs in brain, energy and skill. "The public health service spends little time on publicity," stated Dr. Emerson. "It's thoughts are bent on scientific, not political considerations. It is the least advertised of all our public services, yet it is the first of the fundamental necessities of government if we are to have healthy lives, happy homes, living children and grandparents in every family."

"The public health service wears no striking uniform, it does not break the slumber of the night with the clang of the fire patrol or the shriek of the siren. Yet without it modern life could not endure. Quietly and unobtrusively it goes about supplying the community with pure water uncontaminated with the germs of disease; it disposes of the city's waste and controls its smoke and dirt; it supervises milk and other foods and assures safety from the infections that such supplies may carry. Through the eternal vigilance of its quarantine it renders cities free from devastating plague, from typhus, cholera, yellow fever, and the like. Never sleeping, it guards the child from diphtheria, scarlet and typhiod fever, and other frequently fatal contagious diseases.

"Despite its vital importance the public health service has always been underpaid and understaffed. Yet its achievements have been beyond all praise. Had it shown extravagance or wastefulness comparable to that of other government departments it should submit without protest to the reductions inevitable in times of financial stress. But it has not laid itself open to the charge. On its merits it has the right to demand from all good citizens such generous support that its basic services shall remain unhampered.

"If we people but knew the risk of decreased health protection we would approve reduction in every other department of government before allowing ourselves to be driven to the suicidal procedure of impairing the service that watches with unslumbering vigilance over our comfort, our health and our childrens' lives."

Q. How may the individual physician contribute to the reduction of the costs of illness?

1. By encouraging patients or their friends to discuss incomes in relation to expenses of medical care.

2. By offering a plan of inclusive fees to patients with limited incomes, especially in chronic cases.

3. By hospitalizing patients only when demanded by the patient's best interests.

4. By advising patients as to the proper choice of hospital accommodations and nursing care.

5. By becoming acquainted with and fully utilizing the standard lists of drugs and supplies.

6. By refraining from indulging in unapproved forms of contract medical practice.

7. By teaching and practicing preventive medicine.

J. Iowa S. M. S., August, 1933.

The President's Page

To the Members of the Medical Society of Delaware:

There has been very little of interest take place within the last month. The establishment of the cancer clinics at the hospitals throughout the State has gotten well under way, and the preliminary work, as outlined by Dr. Gay, will undoubtedly bring a great service to doctor as well as to patient. You must all remember that this work is outlined so that no conflict will arise as to whether the patient remains with the doctor who sent him or with the clinic staff. In no instance where a family physician can be traced will the patient be given any information or referred to a clinic.

Along the cancer line, we are working on a case that has been brought to our attention concerning a cancer cure advocated by a John T. Leverage of Dover, Delaware. This said person advertised in one of our Delaware papers, and I am in receipt of a letter written by him to a person in Wilmington in which he claims to be able to cure cancer. A report on the disposition of this case will be given you at a future date.

The program for the coming meeting in September is about completed, we are attempting to make it as interesting as possible, and hope that the weather will not be quite so hot as to allow any of us to use that as an excuse for not attending. It is my opinion that we should go back to the former dates of meeting, namely the second week in October. While this may be an inconvenience to a very small percentage, at the same time the greater majority of us will be more comfortable, and it is the majority that should have the say. Let us all use our influence to bring it back to more comfortable weather.

I hope those of you who have had your vacation have benefited by it and those who are on your vacation will likewise be benefited. From all indications it may be necessary for us to carry on at top speed this winter, as the statisticians are telling us we are due for a great amount of sickness. Judging from the conversation among the doctors this condition does not exist at the present time.

Hoping to see all of you at the meeting in September, I am

Sincerely,

WILLIAM H. SPEER, M. D.

EDITORIAL

DELAWARE STATE MEDICAL JOURNAL

Owned and published by the Medical Society of Delaware. Issued about the twentieth of each month under the supervision of the Publication Committee.

W. EDWIN BIRD, M. D. ..... EDITOR
Du Pont Building, Wilmington, Del.

W. OSCAR LAMOTTE, M. D. ..... Associate Editor
Medical Arts Building, Wilmington, Del.

M. A. TARUMIANZ, M. D. ..... Associate Editor & Bus. Mgr.
Du Pont Building, Wilmington, Del.
Telephone, Wilmington, 4368

Articles sent this Journal for publication and all those read at the annual meetings of the State Society are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Manuscript should be sent in typewritten, double spaced, wide margin, one side only. Manuscript will not be returned unless return postage is forwarded.

The right is reserved to reject material submitted for either editorial or advertising columns. The Publication Committee does not hold itself responsible for views expressed either in editorials or other articles when signed by the author.

Reprints of original articles will be supplied at actual cost, provided request for them is attached to manuscripts or made in sufficient time before publication.

All correspondence regarding editorial matters, articles, book reviews, etc., should be addressed to the Editor. All correspondence regarding advertisements, rates, etc., should be addressed to the Business Manager.

Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

It is suggested that wherever possible members of the State Society should patronize our advertisers in preference to others as a matter of fair reciprocity.

Subscription price: $2.00 per annum in advance. Single copies, 20 cents. Foreign countries: $2.50 per annum.

VOL. V. AUGUST, 1933 No. 8

THE EAR-MARK

This is a State Board of Health number. It should have some characteristic, useful—should other measures fail—for identification purposes. An ear-mark, at least of habit, is an essential, should recognition not be possible by other means.

In the minds of most practitioners, the State Board's special identifying function is an in-season and out-of-season search for birth, death, and morbidity statistics. It is quite in order, therefore, that reference—let us hope not a nagging reference—to this aspect of its work be the ear-mark, lest other measures for establishing identity fail.

There are a number of questions at present pressing for answer at the office of the State Board of Health.

(1) Does the fact that up to the present this year there have been about two hundred fewer births reported than were reported up to the same time last year actually mean that fewer births are taking place?

(2) Or, are the births taking place but not being reported? An interesting corollary to this question is that concerning the length of time the State will be included in the Birth Registration Area of the United States, if this question is answered in the affirmative.

(3) What explains the very marked falling off in the reports of the number of cases of tuberculosis and venereal disease so plainly observable in the last six months? Has tuberculosis given up the fight and decided to claim no more victims? Is there in Delaware only about one third as many cases of venereal disease as are to be found elsewhere in the United States?

We pause, awaiting the answers of the Oracle.

SOME QUERIES

A time of economic stringency, we have always been told, is a time of heightened death rates and lowered birth and marriage rates. Those results followed that cause "as the night the day". They are inseparable. It was axiomatic, that, given one the other would follow. Detailing the steps of the process—an entirely obvious one, orderly in the stages leading to the ultimate result, and one, which, once entered upon must lead to the destined end—was often boresome, so patent did the logic appear, so inevitable the result.

Indeed there were those who attributed all our health advances of recent years to the fact that in these years the United States had climbed to hitherto unapproachable altitudes of economic prosperity. Tuberculosis, though a communicable disease, transmissible to one animal or to man from another animal or man, was according to the views these advanced, the best example of a disease the incidence of which was almost entirely economic. How many of us have heard that "Tuberculosis is not a disease: It is a condition". It had of recent years lessened in incidence and had permitted its victims

to escape, solely because the average wealth had increased. The fact that obstacles had been put in the path of its transmission was completely ignored. The work of physicians who endeavored to protect hitherto un-infected individuals from the infection so commonly found about them was futile, ridiculous in its inefficiency, often persisted in from unworthy motives, irrational and illogical.

At this writing the entire United States has been in serious economic straits for a period approximating three years.

Our death rate should have risen. It has dropped. Tuberculosis should have appeared more frequently on the certificates as the cause of death. Instead, the decline in the rate has been very consistently maintained. Deaths of infants, we are told, should have increased in numbers. These too have fallen. In this State the health records of the year 1932 were about the most favorable which the State has ever presented.

The explanation has been advanced that there would naturally be a reduction in the number of deaths in industrial establishments, if those establishments had closed the doors to their employes; that deaths from automobile accidents would perforce diminish in frequency if car owners had not the wherewithal to purchase gasoline and that "simpler" living under conditions "closer to nature" would account for all the balance. One can not help wonder where the magic line of minimal death rates is which we must have crossed, not recognizing it, on our upward path of progress, and toward which now we are retrogressing. Shall we be able to recognise it when again we cross it? What is its precise relation, say as between an Indian teepee and the Empire State Building? We must have passed it once, though to our knowledge, our infant mortality rate was never lower than it is at the present time. Let us hope that the medical profession, about the hardest hit of all the professions by the untoward happenings, by whatever name we call them, will not be called on to endure greater or much more prolonged trials.

In the meantime these medical practitioners, in the face of dwindling incomes and increasing work, have continued their tasks of preserving the public health. Health officers, their departmental budgets sadly depleted, have continued their programs, little diminishing the volume of their work, through the exercise of stringent economies. Is there not something in the theory that the momentum of public health work is a factor which must be taken into consideration in any prognostication made respecting public health losses? And is it not possible that much of our teaching respecting the paramount importance of economic conditions as a factor determining certain vital statistics, need revision?

EDITORIAL NOTES

DEAR DOCTOR:

THE JOURNAL and the Cooperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

We invite and urge you to use this Service.

It is absolutely *free* to you.

The Cooperative Bureau is equipped with catalogues and price lists of manufacturers, and can supply you information by return mail.

Perhaps you want a certain kind of instrument which is not advertised in THE JOURNAL, and do not know where to secure it; or do not know where to obtain some automobile supplies you need. This Service Bureau will give you the information.

Whenever possible, the goods will be advertised in our pages, but if they are not, we urge you to ask THE JOURNAL about them, or write direct to the Cooperative Medical Advertising Bureau, 535 N. Dearborn St., Chicago, Illinois.

We want THE JOURNAL to serve *you*.

Kidnappings — kidnappings — kidnappings, still they go on. In THE JOURNAL of March 1933 we expressed the opinion that the most effective way to stop this stealing of human beings was to take the money out of the transactions by making it a crime to pay ransom. Dealing directly or through an intermediary is compounding a felony, and makes those so dealing accessories after the act.

Now comes further espousal of our idea from the meeting, this week in Chicago, of the International Association of Police chiefs (of which our own Chief is secretary), from the leading criminologist of New York City, and from the Governor of the State of New York, all of whom consider this idea one of the most effective in the battle against God's lowest product, the human rat.

A few more death sentences, as in the McGee case, and a more active participation by Federal officers will put a crimp into this diabolical business, but nothing will actually stop it like taking away the easy money. This means, perhaps, a few martyrs, and no parent or husband or wife has yet been willing to martyr a loved one (and maybe none ever shall), but the spirit of the public should be keyed up to that,

fine defiance hurled at the Moroccan brigands: "Million's for defense, but not one cent for tribute".

Another thing. How long is the City of Wilmington going to allow helpless children to drown in the millrace in Brandywine Park? We build a beautiful park for the kiddies to play in; then we run through that park the chief water supply for the city; and then, ah! then, we—quit! Where's that iron fence to protect our children from that open cut, with it's six or eight feet of water in it? The last drowning, as late as July 13th, only continues the city's shame. And who wants to drink Wilmington water after such a happening? Talk about making jobs for the unemployed—here's a job that hundreds will tackle gleefully; and for what better purpose could the city's money be spent?

Vacation days are here again. They may be "happy days" if you have the price. If not, they may still be happy if you are a philosopher, but it takes a darn thorough philosopher to face days of 101 degrees, 99 cents, and 57 varieties of mosquitoes and still be happy. Howsoever, vacation days are here again, so make the best of them.

MISCELLANEOUS

Ivy Poisoning—A Summer Health Problem*

With the advent of summer and the ensuing exodus from cities to country resorts, the problem of ivy poisoning presents itself anew.

In order that the citizens of the State may learn to recognize the plant and thus avoid it, the State Department of Health presents this radio talk based largely on the statements of Mr. L. E. Warren of the United States Department of Agriculture and others who have made a study of the Subject.

The symptoms of ivy poisoning range from slight redness and itching to enormous swelling with extensive blisters, accompanied by severe burning sensations. There are all gradations between these extremes. In mild cases the skin is covered with numerous small blisters. The blisters contain a colorless serum which is not poisonous; consequently poisoning can not spread from broken blisters. Pustules may form and infections may result as secondary consequences. Recovery usually occurs in from ten days to three weeks. Occasionally a persistent skin inflammation follows.

Poison ivy may be best recognized by its leaves and by its fruits. Each leaf is divided into three leaflets (never five as in the Virginia creeper or woodbine). The margins of the leaflets vary from smooth to more or less notched. The small greenish flowers appear in May and June, and male and the female flowers being borne on separate plants. The fruits, which are the size of a small pea, are pale green and poisonous when immature but ivory-white and not poisonous after ripening. After the plants are a year or two old they develop aerial rootlets along the stems. These assist the plant in climbing. They also serve as an aid in identification. In the fall the leaves become brilliantly colored, principally scarlet and orange—a circumstance which victimizes many an unsuspecting collector.

Poisoning may result from touching the plants or from coming in contact with clothing, shoes, tools, and the like, which themselves have been contaminated with the sticky juice. The poison retains its virulence for a great length of time so that if contaminated clothing or tools be laid aside at the close of the season poisoning may result the next season on their use being resumed . . . Smoke from the burning plants may carry minute particles of the poison. If this touches the skin or is breathed poisoning will result.

If a person has touched the poisonous plants or had reason to suspect that he has he should wash the hands or other exposed parts of the body with coal oil, rubbing alcohol or gasoline, avoiding the ethyl type of the latter and having due regard to the fire hazard. Afterwards the parts should be thoroughly washed with strong soap suds, using a flesh brush, being sure to brush carefully under the nails. In the absence of gasoline or denatured alcohol washing with soap suds alone is efficacious. Avoid the use of cold cream or ointments of any kind as these dissolve the poison and tend to cause its spread by contaminating the clothing. If these measures are not effective, it is advisable to consult a physician.

Ivy above ground is readily killed by spraying

*Broadcast—Monday, July 31, 1933, from Station WGY, under the Auspices of the New York State Department of Health.

with a strong brine solution which may be made by dissolving three pounds of salt in one gallon of water. Additional spraying may be necessary to kill new shoots.

A better method is to cut the vines, especially if they are growing on fences and trees, below the ground, and then saturate the cut bases with brine. A second dose should be given in about two weeks.

A thorough wetting with kerosene oil, applied by means of a spray pump or sprinkler, will kill plants after one or two applications. This oil should be used with care since it will also kill other plants if it comes in contact with them.

The plants may also be killed by means of a spray consisting of a solution of sodium arsenite, using one pound to five gallons of water. This solution is very poisonous and should not be used where cattle have access.

Crude sulphuric acid will also kill the vines by the application of a few drops at the base of the roots each week until they die. A member of the staff of the State Department of Health has used old crank case oil for this purpose with success.

The vines may be killed by ploughing the soil and planting corn or other hoed crops. The cultivation of the soil by this method will cause the vines gradually to die out.

The *"Rural New Yorker"* recommends the use of calcium chlorate (not the chloride). It is dusted on lightly, when the leaves are damp with dew or rain so that it will not slide off. Its affinity for moisture from the air is so great that very soon the white dust disappears, and drops of moisture are in their place.

As a spray, one pound is enough for from one to two gallons of water. The weaker solution may work but this should be tried, as plants differ in resistance at times. A forcible spray is better than a mere sprinkling.

It acts quickly. In two days the leaves will be withered, and its work goes on until the stem is shriveled and the whole plant apparently dead.

Use of Dehydration in Epilepsy

During the last three years, GEORGE WILSON, Philadelphia, and WILLIAM A. LIMBERGER, West Chester, Pa. (*Journal A. M. A.*, July 8, 1933), tested the effect of hydration and dehydration in epileptic patients. The patients were chosen from among the 130 residents of the colony farm, an attempt being made to select only those who had a reasonable amount of intelligence so that some degree of cooperation could be expected. There were eighteen women and five men in the group tested. Most of the patients had active epilepsy and averaged for the most part from 100 to 300 convulsions a year. In six of the patients the fluid intake alone or, in addition, the fluid output was measured and recorded; in these cases no attempt was made to control the amount of fluid taken per day. In the remaining cases, in addition to recording the fluid intake and output per twenty-four hours, the patients were definitely instructed as to the amount of fluid allowed per twenty-four hours, whether the amount was high or low, and every effort was made to have these orders complied with. In most of the patients there was no definite relation to the number of fits and the fluid intake. In some limitation of fluid seemed to decrease the attacks for a month or two, but if the amount of fluid was then greatly increased, some had a decrease of fits. Not infrequently, a patient on 2,000 cc. or more of fluid who was abruptly placed on a restricted intake of 750 cc. had more attacks than when he was on hydration. One man who had been having from two to five attacks a month for the year before admission was given 1½ grains (0.1 Gm.) of phenobarbital and left to his own desire regarding fluid, except to measure the intake. He has had no attacks for ten months; his average daily intake in that time has been between 2,500 and 3,000 cc. One patient became extremely dull on hydration, and the condition cleared up on restriction of fluid to 500 cc., yet when that level of fluid was maintained and the sedatives (1½ grains of phenobarbital and 15 grains [1 Gm.] of sodium bromide in twenty-four hours) were withdrawn, he had a burst of seizures within two days. A woman, aged 26, was on a level of 558 cc. for two months and had three attacks; the following month the daily average was 651 cc. and she had 818 seizures; no change was made in the medication. In many cases a six months' average of fits on low and high intake, compared with the preceding year's record, during which no restriction or forcing of fluid occurred, showed practically no difference. The authors conclude that dehydration may be of service in the treatment of some epileptic patients if combined with other accepted forms of therapy.

1789—MEDICAL SOCIETY OF DELAWARE—1933

OFFICERS AND COMMITTEES FOR 1933

PRESIDENT: William H. Speer, Wilmington
FIRST VICE-PRESIDENT: Bruce Barnes, Seaford
SECOND VICE-PRESIDENT: G. E. James, Millsboro
SECRETARY: W. O. LaMotte, Wilmington TREASURER: Samuel C. Rumford, Wilmington

COUNCILORS

Lewis Booker, New Castle — R. B. Hopkins, Milton — Joseph Bringhurst, Felton

DELEGATES

To A. M. A.: James Beebe, Lewes — Alternate, C. E. Wagner, Wilmington

STANDING COMMITTEES

COMMITTEE ON SCIENTIFIC WORK
W. O. LaMotte, Wilmington
Stanley Worden, Dover
G. Metzler, Bridgeville

COMMITTEE ON PUBLIC POLICY AND LEGISLATION
J. D. Niles, Townsend
J. H. Mullin, Wilmington
W. J. Marshall, Milford
W. H. Speer, Wilmington
W. O. LaMotte, Wilmington

COMMITTEE ON PUBLICATION
W. E. Bird, Wilmington
W. O. LaMotte, Wilmington
M. A. Tarumianz, Farnhurst

COMMITTEE ON MEDICAL EDUCATION
H. L. Springer, Wilmington
H. V. P. Wilson, Dover
J. R. Elliott, Laurel

COMMITTEE ON HOSPITALS
L. B. Flinn, Wilmington
W. C. Deakyne, Smyrna
C. L. Hudiburg, Georgetown

COMMITTEE ON NECROLOGY
J. W. Bastian, Wilmington
C. B. Scull, Dover
G. V. Wood, Gumboro

SPECIAL COMMITTEES

COMMITTEE ON CANCER
G. C. McElfatrick, Wilmington
E. H. Lenderman, Wilmington
W. H. Kraemer, Wilmington
G. W. Vaughan, Wilmington
Ira Burns, Wilmington
I. J. MacCollum, Wyoming
J. S. McDaniel, Dover
O. V. James, Milford
R. C. Beebe, Lewes

COMMITTEE ON TUBERCULOSIS
M. I. Samuel, Wilmington
B. M. Allen, Wilmington
J. M. Barsky, Wilmington
B. B. G. Blackstone, Wilmington
I. L. Chipman, Wilmington
J. S. McDaniel, Dover
C. J. Prickett, Smyrna
Bruce Barnes, Seaford
James Beebe, Lewes

COMMITTEE ON SYPHILIS
B. S. Vallett, Wilmington
E. Q. Bullock, Wilmington
U. W. Hocker, Lewes

COMMITTEE ON CRIMINOLOGIC INSTITUTES
M. A. Tarumianz, Farnhurst
L. A. H. Bishop, Dover
W. P. Orr, Lewes

COMMITTEE ON MEDICAL ECONOMICS
J. W. Bastian, Wilmington
W. E. Bird, Wilmington
W. V. Marshall, Wilmington
J. P. Wales, Wilmington
C. P. White, Wilmington
W. I. Mayerberg, Dover
W. T. Chipman, Harrington
R. G. Paynter, Georgetown
W. T. Jones, Laurel

COMMITTEE ON LIBRARY
E. R. Mayerberg, Wilmington
Julian Adair, Wilmington
G. W. K. Forrest, Wilmington
B. M. Allen, Wilmington
J. P. Wales, Wilmington
A. J. Strikol, Wilmington
R. W. Tomlinson, Wilmington
C. J. Prickett, Smyrna
H. M. Manning, Seaford

ADVISORY COMMITTEE, WOMAN'S AUXILIARY
T. H. Davies, Wilmington
O. S. Allen, Wilmington
P. R. Smith, Wilmington
C. deJ. Harbordt, Dover
E. L. Stambaugh, Lewes

WOMAN'S AUXILIARY

MRS. ROBERT W. TOMLINSON, *President*, Wilmington.
MRS. C. J. PRICKETT, *Vice-President for Kent County*, Smyrna.
MRS. JAMES BEEBE, *Vice-President for Sussex County*, Lewes.
MRS. IRA BURNS, *Secretary*, Wilmington.
MRS. I. J. MACCOLLUM, *Treasurer*, Wyoming.
MRS. W. EDWIN BIRD, *Editor*, Wilmington.

NEW CASTLE COUNTY MEDICAL SOCIETY—1933

Meets the Third Tuesday

EMIL R. MAYERBERG, *President*, Wilmington.
EDWARD M. VAUGHAN, *Vice-President*, Middletown.
DOUGLAS T. DAVIDSON, *Secretary*, Claymont.
NORWOOD W. VOSS, *Treasurer*, Wilmington.

Delegates: J. W. Bastian, W. E. Bird, L. B. Flinn, B. A. Gross, A. L. Heck, L. J. Jones, L. S. Parsons, J. C. Pierson, M. I. Samuel, H. L. Springer, A. J. Strikol, P. W. Tomlinson, J. P. Wales.

Board of Directors: E. R. Mayerberg, D. T. Davidson, R. W. Tomlinson, A. J. Strikol, C. E. Wagner.

Board of Censors: C. P. White, Julian Adair, C. C. Neese.

Program Committee: E. M. Vaughan, E. R. Mayerberg, D. T. Davidson.

Legislation Committee: G. W. Vaughan, J. D. Niles, H. L. Springer.

Membership Committee: A. L. Heck, J. A. Shapiro, W. M. Pierson.

Necrology Committee: L. B. Flinn, Verna Stevens, E. R. Miller.

Nomination Committee: C. M. Hanby, J. W. Bastian, A. J. Gross.

Audits Committee: L. W. Anderson, R. T. LaRue, J. H. Mullin.

Credit Bureau Committee: P. R. Smith, I. L. Chipman, B. M. Allen.

Public Relations Committee: A. J. Strikol, G. C. McElfatrick, Alexander Smith.

Medical Economics Committee: W. E. Bird, W. O. LaMotte, A. J. Strikol, J. P. Wales, Ira Burns.

DELAWARE ACADEMY OF MEDICINE—1933

LEWIS B. FLINN, *President*
CHARLES E. WAGNER, *First Vice-President*
E. HARVEY LENDERMAN, *Second Vice-President*
JOHN H. MULLIN, *Secretary*
WILLIAM H. KRAEMER, *Treasurer*

Board of Directors: W. S. Carpenter, S. D. Townsend, H. P. Scott, W. G. Spruance, F. G. Tallman.

KENT COUNTY MEDICAL SOCIETY 1933

Meets the First Wednesday

JAMES MARTIN, *President*, Magnolia.
E. RICHMOND STEELE, *Vice-President*, Dover.
JOSEPH BRINGHURST, *Secretary-Treasurer*, Felton.

Delegates: O. V. James, C. J. Prickett, I. J. MacCollum.

Censors: S. M. D. Marshall, W. J. Marshall, W. C. Deakyne.

DELAWARE STATE BOARD OF HEALTH—1933

W. P. Orr, M. D., *President*, Lewes; Mrs. Charles Warner, *Vice-President*, Wilmington; Stanley Worden, M. D., *Secretary*, Dover; Robert Ellegood, M. D., State Road; Mrs. Frank G. Tallman, Wilmington; Margaret I. Handy, M. D., Wilmington; Mrs. Arthur Brewington, Delmar; C. R. Jefferis, D. D. S., Wilmington; Arthur C. Jost, M. D., *Executive Secretary and Registrar of Vital Statistics*, Dover.

DELAWARE STATE DENTAL SOCIETY—1933

D. J. CASEY, *President*, Wilmington.
D. C. PETERS, *Vice-President*, Wilmington.
MORRIS GREENSTEIN, *Secretary*, Wilmington.
P. A. TRAYNOR, *Treasurer*, Wilmington.
F. M. HOOPES, *Librarian*, Wilmington.

Councilors: H. C. Watson, Wilmington; C. F. Pierce, Wilmington; J. C. Wiltbank, Milton.

Delegate to A. D. A.: D. J. Casey, Wilmington; Alternate: J. P. Wintrup, Wilmington.

SUSSEX COUNTY MEDICAL SOCIETY—1933

Meets the Second Thursday

J. P. WAPLES, *President*, Georgetown.
R. B. HOPKINS, *Vice-President*, Milton.
C. L. HUDIBURG, *Secretary-Treasurer* Georgetown.

Delegates: J. B. Waples, G. V. Wood, R. C. Beebe.

Censors: W. F. Haines, G. V. Wood, W. T. Jones.

Program Committee: Bruce Barnes, James Beebe, K. J. Hocker.

Nomination Committee: R. C. Beebe, G. E. James, U. W. Hocker.

Historian: Catherine Gray.

DELAWARE PHARMACEUTICAL SOCIETY—1933

ARTHUR H. MORRIS, *President*, Lewes.
ALBERT B. BUNNIN, *Vice-President for New Castle County*, Wilmington.
HARRY P. JONES, *Vice-President for Kent County*, Smyrna.
EDWARD J. ELLIOTT, *Vice-President for Sussex County*, Bridgeville.
ALBERT DOUGHERTY, *Secretary*, Wilmington.
PETER T. BIENKOWSKI, *Treasurer*, Wilmington.

Board of Directory: A. H. Morris, T. S. Smith, J. W. Wise, G. W. Brittingham, H. K. McDaniel.

Legislative Committee: Thos. Donaldson, Wilmington; O. H. Miller, Wilmington; O. C. Draper, Wilmington; H. E. Culver, Middletown; W. R. Keys, Clayton; J. W. Wise, Dover; H. J. Pettyjohn, Milford; G. E. Swain, Georgetown; A. H. Morris, Lewes.

WILLIAM H. SPEER, M.D.

PRESIDENT of the MEDICAL SOCIETY of DELAWARE

1933